

CHAPTER V

CONCLUSION AND RECOMMENDATION

V.1. Conclusion

Synthesize of bentonite-alginate polymer nanocomposite was successful, which can be seen from the characterization of composite before and after modification, which was marked with the present of some of peaks wavelength shifted for sodium alginate into bentonite-alginate composite.

From effect of pH, adsorbent has higher pH solution than pH_{pzc} , it determines adsorbent has excess OH^- . Therefore, it can adsorb the cationic dye with negatively charged sites.

The removal of crystal violet dye using bentonite-alginate composite in kinetic adsorption was successful using Pseudo-second order equation, which is proven from the good value of correlation factor (R^2), higher than 0.9883. Pseudo-second order determines chemisorption processes as rate limiting step.

It was found that Freundlich isotherm equation gave the best representation for adsorption equilibrium data of crystal violet removal using bentonite-alginate nanocomposite, shown by the consistency of parameter value of Freundlich equation. The increasing of mass ratio in composite making, adsorption capacity of composite also increases. The temperature has significant effect of adsorption. The adsorption capacity of composite is increasing along the temperature increases.

V.2. Recommendation

Modification of bentonite-alginate polymer nanocomposite as adsorbent is recommended in order to increase the ability of adsorption cationic dye.

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